UNCLASSIFIED

AD 401 410

Reproduced
by the

DEFENSE DOCUMENTATION CENTER

FOR

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA

UNCLASSIFIED

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

63 3 2

CATALOGED BY ASTIA
AS AD No. 401410

TM-(L)-715/043/00

TECHNICAL MEMORANDUM

(TM Series)

ASTIA AVAILABILITY NOTICE

Qualified requesters may obtain copies of this report from ASTIA.

This document was produced by SDC in performance of contract AF 19(628)-1648, Space Systems Division Program, for Space Systems Division, AFSC.

Utility Program Descriptions

Milestone 11

Merge Change and Transfer Tapes (SMERGE)

by

H. Frieden

12 March 1963

Approved

J. B. Munson

SYSTEM DEVELOPMENT CORPORATION
2500 COLORADO AVE.
SANTA MONICA
CALIFORNIA

The views, conclusions or recommendations expressed in this document do not necessarily reflect the official views or policies of agencies of the United States Government.

Permission to quote from this document or to reproduce it, wholly or in part, should be obtained in advance from the System Development Corporation.

Although this document contains no classified information it has not been cleared for open publication by the Department of Defense. Open publication, wholly or in part, is prohibited without the prior approval of the System Development Corporation.

401 410

IDENTIFICATION

A. Title: Merge Change and Transfer Tapes (SMERGE) Ident K42, Mod AB

B. Author: H. J. Frieden, 28 February 1963, System Development Corporation

PURPOSE

SMERGE produces an updated 1604-160A Transfer Tape[1] and a duplicate Backup Tape from the existing Transfer Tape and the Change Tape prepared by SWRTOUT. Initially, the existing Transfer Tape contains only an end-of-file mark and the first updated Transfer Tape consists of the information on the Change Tape sorted into the proper order. Thereafter, the existing Transfer Tape is the updated Transfer Tape from the last time SMERGE was operated.

USAGE

A. Calling Sequence

SMERGE is called by a standard COPII calling sequence with no parameters required. It is normally called by SWRTOUT via the successor call function.

B. Tapes Required

1. Unit 16 contains the old Transfer Tape or a tape with an initial end-of-file. After it has been read, SMERGE prints a message to replace with a blank, and then halts. The blank becomes the new Transfer Tape.

2. Unit 17 contains the old Backup Tape. At the beginning of SMERGE, a message to replace with a blank is printed, followed by a halt. The blank becomes the new Backup Tape.

3. Unit 18 contains the Change Tape written by SWRTOUT. At the end of SMERGE, a message to replace with the SCHOPS Tape is printed, followed by a halt.

---

[1] This tape is sometimes referred to as the Prepass Tape. All references in this document to the "Transfer Tape" are to the 1604-160A Transfer Tape.

C. Expected On-Line Printer Messages

After printing each message, SMERGE will first space up the paper to facilitate the reading of the message, and then halt. Press start when ready to continue.

1. REMOVE BACKUP TRANSFER TAPE ON UNIT 17, AND MOUNT BLANK
2. REMOVE OLD TRANSFER TAPE ON UNIT 16, AND MOUNT BLANK
3. REMOVE RINGS FROM NEW TRANSFER AND BACKUP TAPES ON UNITS 16 AND 17
   IF SCHOPS REQUESTS ARE FORTHCOMING, MOUNT SCHOPS TAPE ON UNIT 18.

D. Error Messages

1. In case of a read error on the old Transfer Tape,
   UNRECOVERABLE READ ERROR ON UNIT 16
   MOUNT BACKUP TRANSFER TAPE ON UNIT 16 AND CONTINUE
2. In case of read error after the old Transfer Tape was removed,
   UNRECOVERABLE READ ERROR ON UNIT **
   MOUNT OLD TRANSFER TAPE ON UNIT 16 AND CONTINUE
3. UNRECOVERABLE WRITE ERROR ON UNIT **, MOUNT NEW TAPE AND CONTINUE
4. END OF TAPE REACHED ON UNIT **, MOUNT LONGER TAPE AND CONTINUE
5. PARITY ERROR ON CHANGE TAPE, JOB ABANDONED
6. CHECKSUM ERROR ON CHANGE TAPE, JOB ABANDONED
7. RECORD ON CHANGE TAPE LONGER THAN 512 WORDS, JOB ABANDONED
8. RECORD ON CHANGE TAPE HAS ILLEGAL FORMAT, JOB ABANDONED

If the Change Tape is in error, it must be regenerated. Mount the old Backup and Transfer Tapes and re-run all programs which were used to generate the Change Tape.

E. Change Tape Format

1. Maximum record size is 512 words.
2. Header Records
   a. A Header Record is identified by a first word of 01061204 40626220.

b. Vehicle number, in 4-bit BCD, is in the fourth word, bits 0-15.
c. Revolution number, in 4-bit BCD, is in the fourth word, bits 24-39.
d. Station number, in binary, is in the third word, bits 12-17.

3. Message Records

a. A Message Record is identified by 7777 in bits 36-47 of the first word.
b. Message type, in binary, is in the first word, bits 24-29. A message type of 00 is illegal.
c. The message is for the vehicle, revolution, and station of the preceding Header Record.

4. The tape is ended by an end-of-file mark.

F. Transfer Tape Format

The Transfer Tape has the same format as the Change Tape, but it is ordered by message type within station within revolution within vehicle.

G. Backup Tape Format

The Backup Tape is a copy of the Transfer Tape.

METHOD

SMERGE initially requests the operator to remove the old Backup Tape and mount a blank. All tapes are then rewound. Changes are read into memory from the Change Tape until an end of file is reached or until memory is filled. (Memory will be filled by 1000 records or 20000 words of information.) The changes are sorted into order of message type within station within revolution within vehicle.

The Transfer Tape is then merged with the changes in memory, writing the updated tape on the unit which held the old Backup Tape. Any message block on the existing Transfer Tape which has a corresponding entry on the Change Tape is replaced by the new information. New message blocks

for a particular vehicle, revolution, and station are added in order of message type.

At the end of the first pass, the operator is requested to remove the old Transfer Tape and mount a blank. Additional merges are required if the information on the Change Tape could not all fit into memory at one time. The input and output tapes for each pass alternate between units 16 and 17. When the final merge is done, the updated Transfer Tape is copied onto the Backup Tape. SMERGE requests the operator to file protect the new tapes before returning to MTCII.

If an unrecoverable read error occurs on the Change Tape, no recovery is possible. If an unrecoverable read error occurs on the first pass over the Transfer Tape, SMERGE asks the operator to mount the Backup Tape, and starts over. If an unrecoverable read error occurs on a subsequent pass, SMERGE asks the operator to mount the old Transfer Tape, and starts over. An unrecoverable write error causes SMERGE to return to the beginning of the current merge, after asking the operator to mount a new output tape.

RESTRICTIONS

A. Tape number 16 must be an existant Transfer Tape or a tape initialized by IRT.

B. The code for message type cannot be 00.

C. All records for a particular vehicle, revolution, station, and message type must appear contiguously on the Change Tape. Otherwise, the results will depend on the amount of information on the Change Tape. If the information on the Change Tape can all fit in memory at one time, non-contiguous blocks are added together. If it cannot, a non-contiguous block from a later memory load will replace a block from an earlier memory load.

TIMING

The time for the memory sort of the records on the Change Tape depends on the number of records, their initial order, and the type of records. 1000 records could take from 5-35 seconds, with an average time of 10-15 seconds.

The time to read the Change Tape, merge the changes with the existing Transfer Tape, and copy the Transfer Tape onto the Backup Tape, will be limited by the speed of the tapes.

STORAGE REQUIREMENTS

Program: 440 cells

Constants: 113 cells

Storage: 23539 cells

VALIDATION TESTS

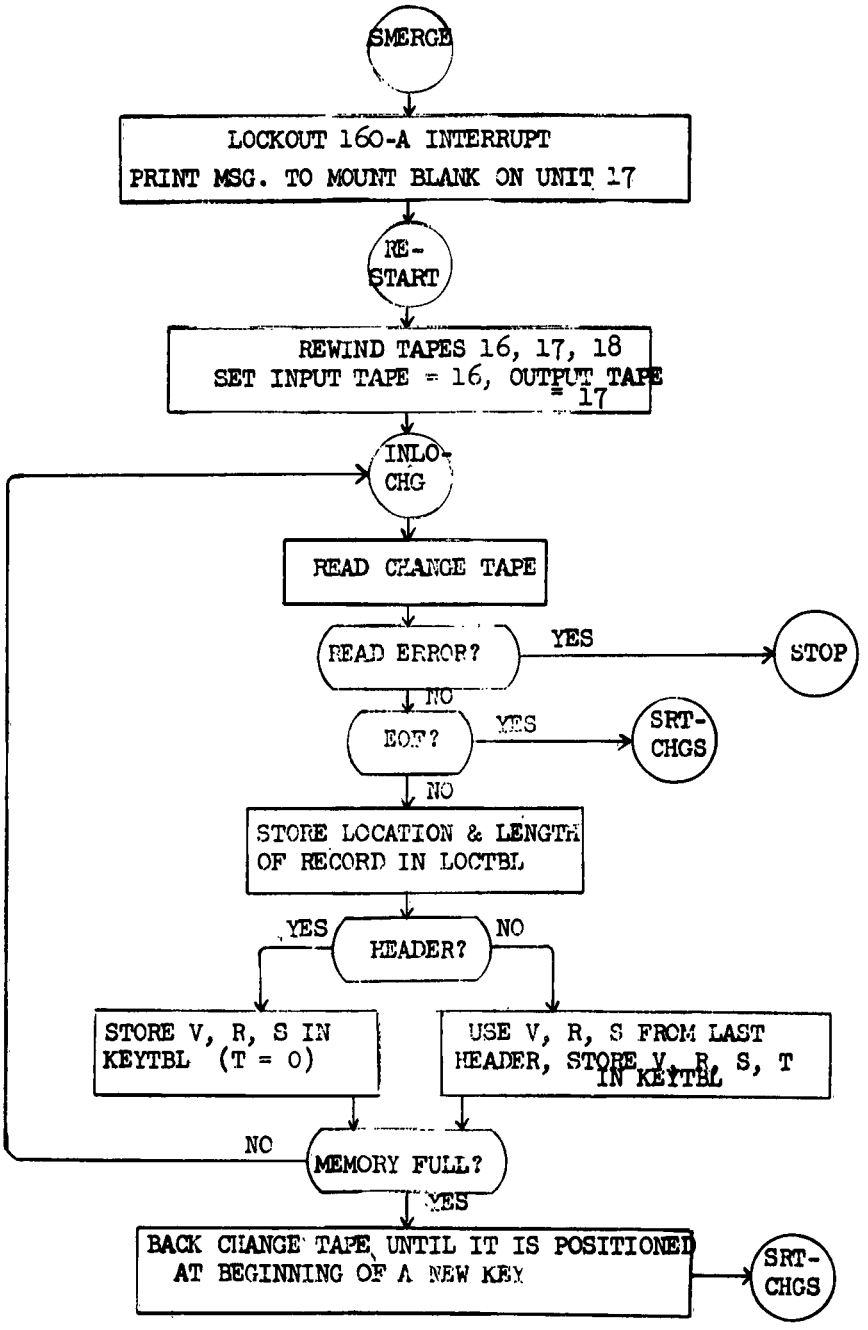
A Change Tape and Transfer Tape were prepared, and mounted on units 18 and 16. SMERGE was operated and produced a new Transfer Tape on unit 16. Tape dumps of the three tapes are shown in Appendices A, B, and C.

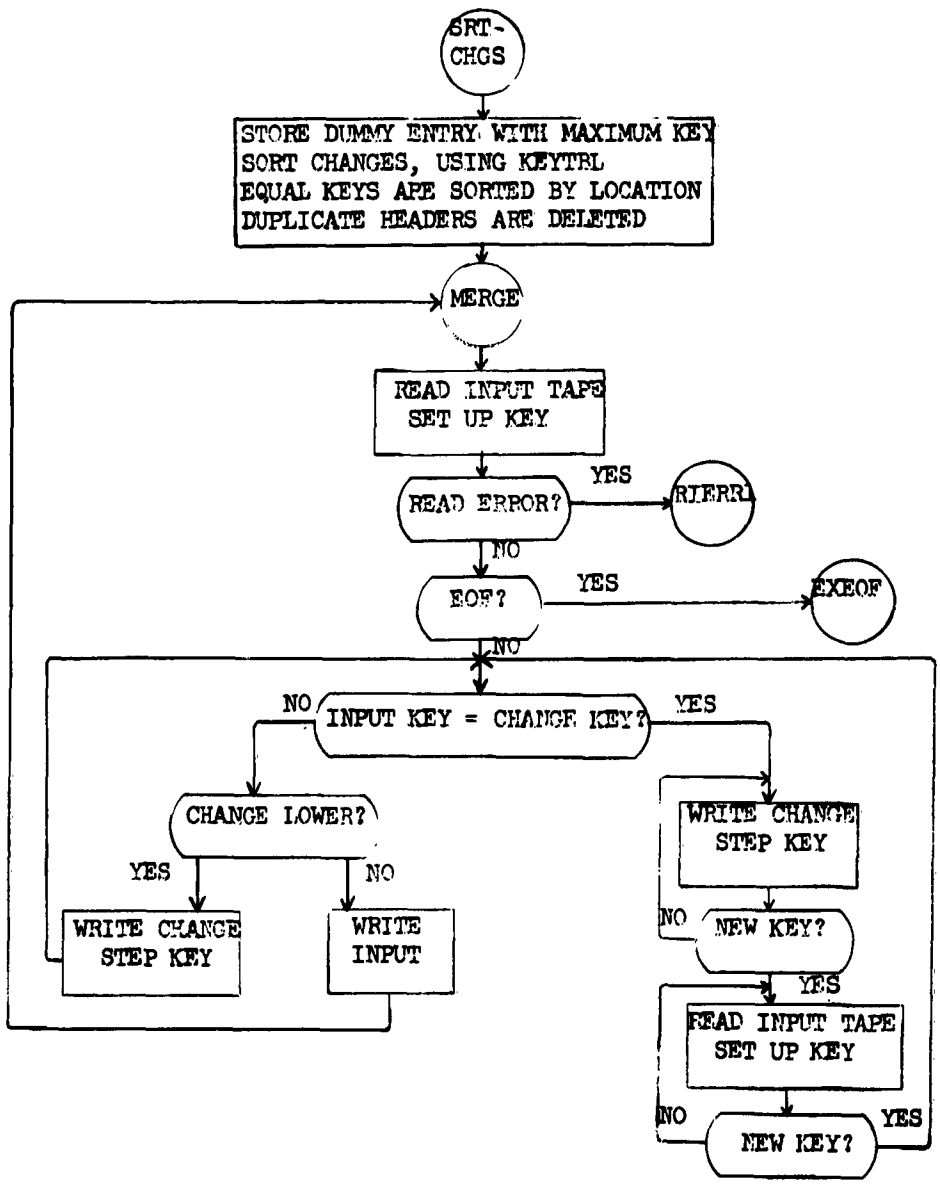
REFERENCE

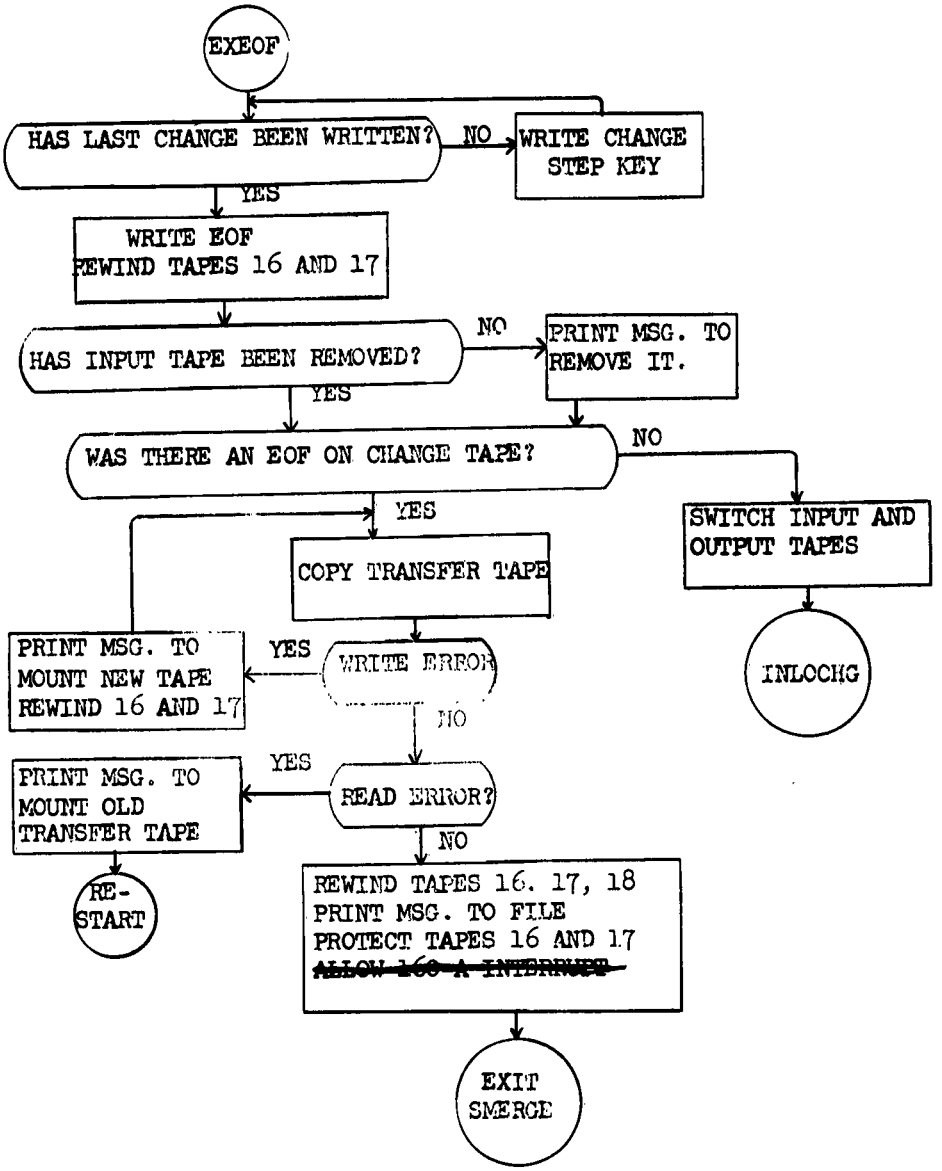
A. AF/CPL number for SMERGE is 76042.

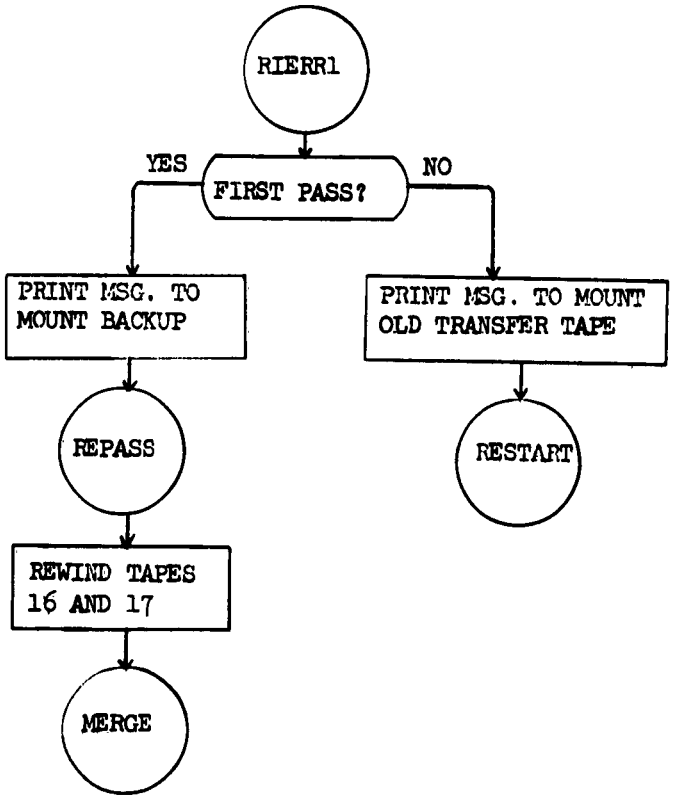
B. TM-891/001/00 (plus Modifications A and B) Combined Milestone 3-4 for the 1604 Augmentation Communication Programs.

C. Utility Programs Descriptions Milestone 11, Write Change Tape (SWRTOUT), TM-(L)-715/044/00


SMERGE
LOCKOUT 160-A INTERRUPT
PRINT MSG. TO MOUNT BLANK ON UNIT 17
RE-START
REWIND TAPES 16, 17, 18
SET INPUT TAPE = 16, OUTPUT TAPE = 17
INLO-CHG
READ CHANGE TAPE
READ ERROR?
YES
STOP
NO
EOF?
YES
SRT-CHGS
NO
STORE LOCATION & LENGTH OF RECORD IN LOCTBL
YES
HEADER?
NO
STORE V, R, S IN KEYTBL (T = 0)
USE V, R, S FROM LAST HEADER, STORE V, R, S, T IN KEYTBL
NO
MEMORY FULL?
YES
BACK CHANGE TAPE UNTIL IT IS POSITIONED AT BEGINNING OF A NEW KEY
SRT-CHGS


SRT-CHGS
STORE DUMMY ENTRY WITH MAXIMUM KEY
SORT CHANGES, USING KEYTRL
EQUAL KEYS ARE SORTED BY LOCATION
DUPLICATE HEADERS ARE DELETED
MERGE
READ INPUT TAPE
SET UP KEY
READ ERROR?
YES
RIERRL
NO
EOF?
YES
EXEOF
NO
NO
INPUT KEY = CHANGE KEY?
YES
CHANGE LOWER?
YES
NO
WRITE CHANGE STEP KEY
WRITE INPUT
WRITE CHANGE STEP KEY
NO
NEW KEY?
YES
READ INPUT TAPE
SET UP KEY
NO
NEW KEY?
YES


EXEOF
HAS LAST CHANGE BEEN WRITTEN?
NO
WRITE CHANGE STEP KEY
YES
WRITE EOF REWIND TAPES 16 AND 17
HAS INPUT TAPE BEEN REMOVED?
NO
PRINT MSG. TO REMOVE IT.
YES
WAS THERE AN EOF ON CHANGE TAPE?
NO
YES
SWITCH INPUT AND OUTPUT TAPES
COPY TRANSFER TAPE
INLOCHG
PRINT MSG. TO MOUNT NEW TAPE REWIND 16 AND 17
YES
WRITE ERROR
NO
PRINT MSG. TO MOUNT OLD TRANSFER TAPE
YES
READ ERROR?
NO
RE-START
REWIND TAPES 16. 17, 18
PRINT MSG. TO FILE
PROTECT TAPES 16 AND 17
EXIT SMERGE


RIERR1
YES
FIRST PASS?
NO
PRINT MSG. TO MOUNT BACKUP
PRINT MSG. TO MOUNT OLD TRANSFER TAPE
REPASS
RESTART
REWIND TAPES 16 AND 17
MERGE

```
    TAPE  52031    PRINT  00001 FILES   PRINT  00000 RECORDS    SKIP  00000 FILES   SKIP   00000 RECORDS
    FILE NO.  00001
    RECORD NO. 00001        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220    23 5 16145   22 6 66551   20 6 46123   61 0 30000   00 0 00001   00 0 00001
00004    32 3 32301   33 2 33005
    RECORD NO. 00002        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00003
00004    00 0 00000   00 0 00000   00 0 00000   00 0 00001   00 0 00000   00 0 00011   00 0 07566   66 4 47760
    RECORD NO. 00003        00010(OCTAL) WORDS
00000    77 7 70311   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07466   66 4 47770
    RECORD NO. 00004        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220    23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00002   00 0 00001
00004    32 3 32300   33 2 43005
    RECORD NO. 00005        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00003
00004    00 0 00000   00 0 00000   00 0 00000   00 0 00001   00 0 00000   00 0 00011   00 0 07566   66 4 47760
    RECORD NO. 00006        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220    23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00001   00 0 00001
00004    32 3 32301   33 2 43005
    RECORD NO. 00007        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00000   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 07566   66 4 47770
    RECORD NO. 00010        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 07566   66 4 47770
    RECORD NO. 00011        00010(OCTAL) WORDS
```

APPENDIX A CHANGE TAPE

```
00000  77 7 70216  11 3 30000  00 0 00000  00 0 00002  00 0 00000  00 0 00001  00 0 00000  00 0 00000
00004  00 0 00000  00 0 00001  00 0 00000  00 0 00001  00 0 00000  00 0 00002  00 0 07566  66 4 47770

        RECORD NO. 00012        00005(OCTAL) WORDS

00000  01 0 61204  40 6 26220  23 5 16145  22 6 66551  20 6 46123  61 0 30000  00 0 00001  00 0 00001
00004  32 3 32301  33 2 33005

        RECORD NO. 00013        00010(OCTAL) WORDS

00000  77 7 70316  16 3 30000  00 0 00000  00 0 00001  00 0 00000  00 0 00001  00 0 00000  00 0 00001
00004  00 0 00000  00 0 00001  00 0 00000  00 0 00001  00 0 00000  00 0 00001  00 0 07461  61 4 47771

        RECORD NO. 00014        00005(OCTAL) WORDS

00000  01 0 61204  40 6 26220  23 5 16145  22 6 66551  20 6 46123  61 0 20000  00 0 00002  00 0 00001
00004  32 3 32300  33 2 43005

        RECORD NO. 00015        00010(OCTAL) WORDS

00000  77 7 70216  16 3 30000  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00002
00004  00 0 00000  00 0 00004  00 0 00000  00 0 00000  00 0 00000  00 0 00001  00 0 07561  61 4 47770

        RECORD NO. 00016        00005(OCTAL) WORDS

00000  01 0 61204  40 6 26220  23 5 16145  22 6 66551  20 6 46123  61 0 20000  00 0 00001  00 0 00001
00004  32 3 32301  33 2 43005

        RECORD NO. 00017        00010(OCTAL) WORDS

00000  77 7 70216  16 3 30000  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00002
00004  00 0 00000  00 0 00004  00 0 00000  00 0 00000  00 0 00000  00 0 00001  00 0 07561  61 4 47770

        RECORD NO. 00020        00005(OCTAL) WORDS

00000  01 0 61204  40 6 26220  23 5 16145  22 6 66551  20 6 46123  61 0 20000  00 0 00002  00 0 00001
00004  32 3 32300  33 2 43005

        RECORD NO. 00021        00010(OCTAL) WORDS

00000  77 7 70225  25 3 30000  00 0 00000  00 0 00002  00 0 00000  00 0 00002  00 0 00000  00 0 00002
00004  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00101  00 0 07552  52 4 47670

        RECORD NO. 00022        00010(OCTAL) WORDS

00000  77 7 70225  25 3 30000  00 0 00000  00 0 00002  00 0 00000  00 0 00002  00 0 00000  00 0 00002
00004  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00000  00 0 00101  00 0 07552  52 4 47670

        END OF FILE
```

```
TAPE  52011    PRINT  00001 FILES    PRINT  00000 RECORDS    SKIP  00000 FILES    SKIP  00000 RECORDS
FILE NO.  00003
FILE NO.  00001
RECORD NO. 00001          00005(OCTAL) WORDS

00000    01 0 61204   40 6 26220   23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00001   00 0 00001
00004    32 3 32301   33 2 43005

RECORD NO. 00002          00010(OCTAL) WORDS

00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 07566   66 4 47770

RECORD NO. 00003          00010(OCTAL) WORDS

00000    77 7 70211   11 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 07566   66 4 47770

RECORD NO. 00004          00010(OCTAL) WORDS

00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 07566   66 4 47770

RECORD NO. 00005          00010(OCTAL) WORDS

00000    77 7 70226   26 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 07551   51 4 47770

RECORD NO. 00006          00010(OCTAL) WORDS

00000    77 7 70226   26 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07551   51 4 47770

RECORD NO. 00007          00010(OCTAL) WORDS

00000    77 7 70231   31 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 07546   46 4 47770

RECORD NO. 00010          00005(OCTAL) WORDS

00000    01 0 61204   40 6 26220   23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00002   00 0 00001
00004    32 3 32300   33 2 43005

RECORD NO. 00011          00010(OCTAL) WORDS
```

APPENDIX B OLD TRANSFER TAPE

```
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07566   66 4 47770
     RECORD NO. 00012        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220   23 5 16145   22 6 66551   20 6 46123   61 0 30000   00 0 00002   00 0 00001
00004    32 3 32300   33 2 33005
     RECORD NO. 00013        00010(OCTAL) WORDS
00000    77 7 70311   11 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07466   66 4 47770
     RECORD NO. 00014        00010(OCTAL) WORDS
00000    77 7 70316   16 3 30000   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07461   61 4 47771
     RECORD NO. 00015        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220   23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00003   00 0 00001
00004    32 3 32277   33 2 43005
     RECORD NO. 00016        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00000   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 07566   66 4 47770
     RECORD NO. 00017        00010(OCTAL) WORDS
00000    77 7 70216   16 3 30000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 07561   61 4 47770
     RECORD NO. 00020        00010(OCTAL) WORDS
00000    77 7 70225   29 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00001   00 0 07552   52 4 47770
     RECORD NO. 00021        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220   23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00001   00 0 00002
00004    32 3 32301   33 2 43004
     RECORD NO. 00022        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07566   66 4 47770
     END OF FILE
```

```
TAPE 52011   PRINT 00001 FILES   PRINT 00000 RECORDS   SKIP 00000 FILES   SKIP 00000 RECORDS
FILE NO. 00001
RECORD NO. 00001        00005(OCTAL) WORDS
00000    01 0 61204  40 6 26220   23 5 16145  22 6 66551   20 6 46123  61 0 20000   00 0 00001  00 0 00001
00004    32 3 32301  33 2 43005
RECORD NO. 00002        00010(OCTAL) WORDS
00000    77 7 70211  11 3 30000   00 0 00000  00 0 00001   00 0 00000  00 0 00000   00 0 00000  00 0 00002
00004    00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00002   00 0 07566  66 4 47770
RECORD NO. 00003        00010(OCTAL) WORDS
00000    77 7 70211  11 3 30000   00 0 00000  00 0 00001   00 0 00000  00 0 00002   00 0 00000  00 0 00000
00004    00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00002   00 0 07566  66 4 47770
RECORD NO. 00004        00010(OCTAL) WORDS
00000    77 7 70211  11 3 30000   00 0 00000  00 0 00002   00 0 00000  00 0 00001   00 0 00000  00 0 00000
00004    00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00002   00 0 07566  66 4 47770
RECORD NO. 00005        00010(OCTAL) WORDS
00000    77 7 70216  16 3 30000   00 0 00000  00 0 00000   00 0 00000  00 0 00000   00 0 00000  00 0 00002
00004    00 0 00000  00 0 00004   00 0 00000  00 0 00000   00 0 00000  00 0 00001   00 0 07561  61 4 47770
RECORD NO. 00006        00010(OCTAL) WORDS
00000    77 7 70226  26 3 30000   00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00001
00004    00 0 00000  00 0 00001   00 0 00000  00 0 00002   00 0 00000  00 0 00001   00 0 07551  51 4 47770
RECORD NO. 00007        00010(OCTAL) WORDS
00000    77 7 70226  26 3 30000   00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00001
00004    00 0 00000  00 0 00002   00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 07551  51 4 47770
RECORD NO. 00010        00010(OCTAL) WORDS
00000    77 7 70231  31 3 30000   00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00001
00004    00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00002   00 0 07546  46 4 47770
RECORD NO. 00011        00005(OCTAL) WORDS
00000    01 0 61204  40 6 26220   23 5 16145  22 6 66551   20 6 46123  61 0 30000   00 0 00001  00 0 00001
00004    32 3 32301  33 2 33005
RECORD NO. 00012        00010(OCTAL) WORDS
00000    77 7 70211  11 3 30000   00 0 00000  00 0 00001   00 0 00000  00 0 00001   00 0 00000  00 0 00003
00004    00 0 00000  00 0 00000   00 0 00000  00 0 00001   00 0 00000  00 0 00011   00 0 07566  66 4 47760
RECORD NO. 00013        00010(OCTAL) WORDS
```

APPENDIX C NEW TRANSFER TAPE

```
00000    77 7 70311   11 3 30000    00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07466   66 4 47770

     RECORD NO. 00014        00010(OCTAL) WORDS

00000    77 7 70316   16 3 30000    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07461   61 4 47771

     RECORD NO. 00015        00005(OCTAL) WORDS

00000    01 0 61204   40 6 26220    23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00002   00 0 00001
00004    32 3 32300   33 2 43005

     RECORD NO. 00016        00010(OCTAL) WORDS

00000    77 7 70211   11 3 30000    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00003
00004    00 0 00000   00 0 00000    00 0 00000   00 0 00001   00 0 00000   00 0 00011   00 0 07566   66 4 47760

     RECORD NO. 00017        00010(OCTAL) WORDS

00000    77 7 70216   16 3 30000    00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00004    00 0 00000   00 0 00000   00 0 00000   00 0 00001   00 0 07561   61 4 47770

     RECORD NO. 00020        00010(OCTAL) WORDS

00000    77 7 70225   25 3 30000    00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00000    00 0 00000   00 0 00000   00 0 00000   00 0 00101   00 0 07552   52 4 47670

     RECORD NO. 00021        00010(OCTAL) WORDS

00000    77 7 70225   25 3 30000    00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00000    00 0 00000   00 0 00000   00 0 00000   00 0 00101   00 0 07552   52 4 47670

     RECORD NO. 00022        00005(OCTAL) WORDS

00000    01 0 61204   40 6 26220    23 5 16145   22 6 66551   20 6 46123   61 0 30000   00 0 00002   00 0 00001
00004    32 3 32300   33 2 33005

     RECORD NO. 00023        00010(OCTAL) WORDS

00000    77 7 70311   11 3 30000    00 0 00000   00 0 00001   00 0 00000   00 0 00002   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07466   66 4 47770

     RECORD NO. 00024        00010(OCTAL) WORDS

00000    77 7 70316   16 3 30000    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 00000   00 0 00001
00004    00 0 00000   00 0 00001    00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07461   61 4 47771

     RECORD NO. 00025        00005(OCTAL) WORDS

00000    01 0 61204   40 6 26220    23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00003   00 0 00001
00004    32 3 32277   33 2 43005

     RECORD NO. 00026        00010(OCTAL) WORDS
```

```
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00000   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 07566   66 4 47770
     RECORD NO. 00027        00010(OCTAL) WORDS
00000    77 7 70216   16 3 30000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 07561   61 4 47770
     RECORD NO. 00030        00010(OCTAL) WORDS
00000    77 7 70225   25 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00002   00 0 00000   00 0 00002
00004    00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00000   00 0 00001   00 0 07552   52 4 47770
     RECORD NO. 00031        00005(OCTAL) WORDS
00000    01 0 61204   40 6 26220   23 5 16145   22 6 66551   20 6 46123   61 0 20000   00 0 00001   00 0 00002
00004    32 3 32301   33 2 43004
     RECORD NO. 00032        00010(OCTAL) WORDS
00000    77 7 70211   11 3 30000   00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 00000   00 0 00000
00004    00 0 00000   00 0 00002   00 0 00000   00 0 00001   00 0 00000   00 0 00001   00 0 07566   66 4 47770
     END OF FILE

     END OF TAPE
     *EOT 3
```

DISTRIBUTION LIST

External

Space Systems Division
(Contracting Agency)
Major C. R. Bond (SSOCD)

6594th Aerospace Test Wing
(Contracting Agency)
Lt. Col. A. W. Dill (TWRD)
Lt. Col. M. S. McDowell (TWRU) (2)
TWACS (6)
V. Thomas

PIR-E1 (Lockheed)
N. N. Epstein
C. H. Finnie
H. F. Grover
W. E. Moorman 95)
H. R. Miller
461 Program Office
698HK Program Office

PIR-E2 (Philco)
J. A. Bean
J. A. Isaacs
R. Morrison
S. M. Stanley

PIR-E3 (FLE)
D. F. Criley
K. B. Williams (5)

PIR-E8 (Mellonics)
F. Druding

PIR-E5 (Aerospace)
F. M. Adair
R. V. Bigelow
R. G. Brandsberg
L. H. Garcia
C. S. Hoff
L. J. Kreisberg
T. R. Parkin
E. E. Retzlaff
H. M. Reynolds
D. Saadeh
R. G. Stephenson
V. White

PIR-E7 (STL)
A. J. Carlson

PIR-E4 (GE-Sunnyvale)
J. Farrentine
N. Kirby

PIR-E4 (GE-Santa Clara)
D. Alexander

PIR-E4 (GE-Box 8555)
J. S. Brainard
R. J. Katucki
J. D. Selby

PIR-E4 (GE-3198 Chestnut)
J. F. Butler
H. D. Gilman

PIR-E4 (GE-Bethesda)
A. Pacchioli

PIR-E4 (GE-Box 8661)
J. D. Rogers

12 March 1963 TM-(L)-715/043/00

DISTRIBUTION LIST

Internal

NAME	ROOM	NAME	ROOM
Busch, R. E.	24065B	Polk, T. W.	24099
Champaign, M. E.	24127B	Seiden, H. R.	22091A
Dobbs, G. H.	24094	Stone, E. S.	22116B
Greenwald, I. D.	24058A	Tennant, T. C.	27024
Kneemeyer, J. A.	24065A	Vorhaus, A. H.	24082A
Knight, R. D.	24103	Wong, J. P.	24082A
Munson, J. B.	24048	Frieden, H. J.	24071
Myers, G. L.	14056A	AFCPL (5)	14059

UNCLASSIFIED

System Development Corporation,
Santa Monica, California
UTILITY PROGRAM DESCRIPTIONS,
MILESTONE 11, MERGE CHANGE AND
TRANSFER TAPES (SMERGE).
Scientific rept., TM(L)-715/043/00,
by H. Frieden. 12 March 1963, 19p.
(Contract AF 19(628)-1648, Space
Systems Division Program, for Space
Systems Division, AFSC)

Unclassified report

DESCRIPTORS: Programming (Computers).
Satellite Networks.

UNCLASSIFIED

UNCLASSIFIED

States that SMERGE produces an updated 1604-160A Transfer Tape and a duplicate Backup Tape from the existing Transfer Tape and the Change Tape prepared by SWRTOUT. Also states that initially, the existing Transfer Tape contains only an end-of-file mark and the first updated Transfer Tape consist of the information on the Change Tape sorted into the proper order.

UNCLASSIFIED